

# Work Order ID 145014

April 29, 2016 9:50:46 AM

**\*145014\***

Page 1

Item ID: D2896-1 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Support  
 Start Date: 5/2/2016 Start Qty: 10.00 **\*10\*** Cust Item ID:  
 Required Date: 5/16/2016 Req'd Qty: 10.00 **\*10\*** Customer:  
 Reference:

Approvals: Process Plan: JS **10160429** Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr                       | Revision Nbr             |                      |         |        |              |               |               |                  |                |
| D2896                          | C                        |                      |         |        |              |               |               |                  |                |

100

0.22

**\*100\***

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

3.60

HAAS CNC vertical machine #1

Machine as per Folio FA167

Folio Rev: AA

Dwg Rev: C

Deburr

\*\*\*\*Program Batch #\*\*\*\*\*

110

0.00

**\*110\***

QC

Quality Control

QC Inspection performed by CMM

inspect parts off machine

Memo

0.00

10  $\phi$  216-5-9

PTO

10  $\phi$  216-5-9

DQA:

Date: 16.05.27



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 16/05/17

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                    |  |  |
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| Work Order: <u>145014</u><br>Part No. <u>D2896-1</u><br>NCR No. <u>16-5788</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | <b>DISPOSITION</b><br>Rework <input checked="" type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br>Skid-tube <input type="checkbox"/> Cross tube <input type="checkbox"/> Water Jet <input type="checkbox"/> Engineering <input type="checkbox"/><br>Machining <input checked="" type="checkbox"/> Small Fab <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Quality <input type="checkbox"/><br>Thermoforming <input type="checkbox"/> Finishing <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Other <input type="checkbox"/><br>Large Fab <input type="checkbox"/> Composite <input type="checkbox"/> Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |                                                                                                                                                                                                    |  |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Step #: <u>100</u>                                                                                                                                                                        |  | QTY Effective : <u>①</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  | MRB (QSI042) Approval                                                                                                                                                                              |  |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                           |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  | DAS 12 <u>16/5/9</u><br>Completed By<br>DAS 12 <u>SK</u> <u>16/5/9</u><br>Lead hand / Supervisor<br>Approval Verification<br><u>16/05/09</u><br>QC / QA Coordinator<br>Approval<br><u>16-05-12</u> |  |  |
| 2 parts have tooling holes off by 16°<br>One thickness at clamp groove 0.052<br>#2 extra holes were drilled for holding purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                           |  | Acceptable. Tooling holes only.<br>Acceptable to drill additional tooling holes as needed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                                                                    |  |  |
| <b>Root Cause</b><br>Environment <input type="checkbox"/> No Re-verification <input type="checkbox"/><br>Design <input checked="" type="checkbox"/> Operator <input type="checkbox"/><br>Doc/Data <input checked="" type="checkbox"/> Offset/Setup <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/> Supplier <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/> Training <input type="checkbox"/><br>Material <input type="checkbox"/> Use for Testing <input type="checkbox"/><br>Internal Transport <input type="checkbox"/> Poor Information <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/> Rushing <input type="checkbox"/><br>LOA <input type="checkbox"/> Product Improvement <input type="checkbox"/><br>Substation <input type="checkbox"/> Process Improvement <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/> Manufacturing Process <input type="checkbox"/><br>Misidentified <input type="checkbox"/> Past Due <input type="checkbox"/> |  |                                                                                                                                                                                           |  | <b>FAULT CATEGORY</b><br>Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Positioned Wrong <input type="checkbox"/><br>Bending <input type="checkbox"/> Set-up <input type="checkbox"/> Folio/Program <input type="checkbox"/> Outside Dimensions <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/> BOM/Route <input type="checkbox"/> Grain <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/><br>Cracks <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Weld <input type="checkbox"/> Part Incorrect <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/><br>Cuffs <input type="checkbox"/> Contamination <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Part Moved <input type="checkbox"/><br>Crushing <input type="checkbox"/> Countersink <input type="checkbox"/> Off-set <input type="checkbox"/> Drawing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Mislabeled <input type="checkbox"/> Finish <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Fit/Function <input type="checkbox"/> Misread <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/> Drill Holes <input checked="" type="checkbox"/> Misaligned/off center <input type="checkbox"/> Turning Sequence <input type="checkbox"/> |  |  |                                                                                                                                                                                                    |  |  |
| OTHER :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                    |  |  |

## Work Order ID 145014

April 29, 2016 9:50:46 AM

**\*145014\***

Page 2

Item ID: D2896-1

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Support

Stop **\*NS2\***

Start Date: 5/2/2016 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 5/16/2016 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

QC8- Inspect parts - second check

0.00

**\*120\***

QC

Memo

0.20

Quality Control

B.D 16/05/12

10

0

DAS  
08  
9-89

130

Identify as per dwg & Stock Location: LG51

0.00

**\*130\***

Packaging

Memo

0.10

Packaging

LOCATION: ~~LG053~~

10

DAS  
41  
9-89

16-5-12

140

QC21- Final Inspection - Work Order Release

0.00

**\*140\***

QC

Memo

1.00

Quality Control

MWS

MAY 12 2016

MWS

MAY 12 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |                                                            |                                                |                                               |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
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| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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|                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left;">Root Cause</th> <th colspan="3" style="text-align: left;">FAULT CATEGORY</th> </tr> </thead> <tbody> <tr> <td style="width: 15%;">Environment <input type="checkbox"/></td> <td style="width: 15%;">No Re-verification <input type="checkbox"/></td> <td style="width: 15%;">Pressure/Forced <input type="checkbox"/></td> <td style="width: 15%;">Temperature/Cure <input type="checkbox"/></td> <td style="width: 15%;">Power Loss/Surge <input type="checkbox"/></td> <td style="width: 15%;">Positioned Wrong <input type="checkbox"/></td> </tr> <tr> <td>Design <input type="checkbox"/></td> <td>Operator <input type="checkbox"/></td> <td>Bending <input type="checkbox"/></td> <td>Set-up <input type="checkbox"/></td> <td>Folio/Program <input type="checkbox"/></td> <td>Outside Dimensions <input type="checkbox"/></td> </tr> <tr> <td>Doc/Data <input type="checkbox"/></td> <td>Offset/Setup <input type="checkbox"/></td> <td>Centre Not Concentric <input type="checkbox"/></td> <td>BOM/Route <input type="checkbox"/></td> <td>Grain <input type="checkbox"/></td> <td>Over/Under tolerance <input type="checkbox"/></td> </tr> <tr> <td>Equip/Tooling <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td>Cracks <input type="checkbox"/></td> <td>Broken/Damage/Defect <input type="checkbox"/></td> <td>Weld <input type="checkbox"/></td> <td>Part Incorrect <input type="checkbox"/></td> </tr> <tr> <td>Handling/Pre <input type="checkbox"/></td> <td>Training <input type="checkbox"/></td> <td>Crimp/Kink/Ripple/Wave <input type="checkbox"/></td> <td>Inspection Incomplete/Unqualified <input type="checkbox"/></td> <td>Wrong Stock Pulled <input type="checkbox"/></td> <td>Part Lost/Missing <input type="checkbox"/></td> </tr> <tr> <td>Material <input type="checkbox"/></td> <td>Use for Testing <input type="checkbox"/></td> <td>Cuffs <input type="checkbox"/></td> <td>Contamination <input type="checkbox"/></td> <td>Out of Sequence <input type="checkbox"/></td> <td>Part Moved <input type="checkbox"/></td> </tr> <tr> <td>Internal Transport <input type="checkbox"/></td> <td>Poor Information <input type="checkbox"/></td> <td>Crushing <input type="checkbox"/></td> <td>Countersink <input type="checkbox"/></td> <td>Off-set <input type="checkbox"/></td> <td>Drawing <input type="checkbox"/></td> </tr> <tr> <td>Tribal Knowledge <input type="checkbox"/></td> <td>Rushing <input type="checkbox"/></td> <td>Heat Treat <input type="checkbox"/></td> <td>Cut Too Short <input type="checkbox"/></td> <td>Mislabeled <input type="checkbox"/></td> <td>Finish <input type="checkbox"/></td> </tr> <tr> <td>LOA <input type="checkbox"/></td> <td>Product Improvement <input type="checkbox"/></td> <td>Wave/Twist in Tube <input type="checkbox"/></td> <td>Instructions Incomplete/Unclear <input type="checkbox"/></td> <td>Fit/Function <input type="checkbox"/></td> <td>Misread <input type="checkbox"/></td> </tr> <tr> <td>Substation <input type="checkbox"/></td> <td>Process Improvement <input type="checkbox"/></td> <td>Marks/Chatter <input type="checkbox"/></td> <td>Drill Holes <input type="checkbox"/></td> <td>Misaligned/off center <input type="checkbox"/></td> <td>Turning Sequence <input type="checkbox"/></td> </tr> <tr> <td>Past Expiry Date <input type="checkbox"/></td> <td>Manufacturing Process <input type="checkbox"/></td> <td colspan="4" rowspan="2" style="vertical-align: top;">OTHER : _____</td> </tr> <tr> <td>Misidentified <input type="checkbox"/></td> <td>Past Due <input type="checkbox"/></td> </tr> </tbody> </table> |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                            |                                                |                                               | Root Cause |  |  | FAULT CATEGORY |  |  | Environment <input type="checkbox"/> | No Re-verification <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/> | Design <input type="checkbox"/> | Operator <input type="checkbox"/> | Bending <input type="checkbox"/> | Set-up <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Doc/Data <input type="checkbox"/> | Offset/Setup <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Grain <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Equip/Tooling <input type="checkbox"/> | Supplier <input type="checkbox"/> | Cracks <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Weld <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Handling/Pre <input type="checkbox"/> | Training <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Material <input type="checkbox"/> | Use for Testing <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Crushing <input type="checkbox"/> | Countersink <input type="checkbox"/> | Off-set <input type="checkbox"/> | Drawing <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Rushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Finish <input type="checkbox"/> | LOA <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misread <input type="checkbox"/> | Substation <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | OTHER : _____ |  |  |  | Misidentified <input type="checkbox"/> | Past Due <input type="checkbox"/> |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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|                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Environment <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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                      |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Design <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Doc/Data <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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                      |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Equip/Tooling <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Handling/Pre <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Training <input type="checkbox"/>                                                                                                                                                  | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Material <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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                      |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Internal Transport <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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                      |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Tribal Knowledge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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                      |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| LOA <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   | 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                      |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Substation <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Process Improvement <input type="checkbox"/>                                                                                                                                       | Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |            |  |  |                |  |  |                                      |                                             |                                          |                                           |                                           |                                           |                                 |                                   |                                  |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Past Expiry Date <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Manufacturing Process <input type="checkbox"/>                                                                                                                                     | OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                            |                                                |                                               |            |  |  |                |  |  |                                      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                                                |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |
| Misidentified <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                            |                                                |                                               |            |  |  |                |  |  |                                      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                                                |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |                                        |                                   |

# Picklist Print

April 29, 2016 9:50:52 AM

Page 1/1

Work Order ID: 145014

**\*145014\***

Parent Item: D2896-1

**\*D2896-1\***

Parent Item Name: Support

Start Date: 5/2/2016

Required Date: 5/16/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP: B02.11.26Reformat; Added P/O; Added mask holeKJ  
IPP Rev:C As per Rev B 07-04-16 JLM  
IPP D 08.03.19 Re-format EC verified by DD IPP REV:E  
11.10.03 ASPER REV.C DD VERF:EC

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| DSK080                          |                        | Manufactured  | No          |                     |                  | 100             | Each               | 5.0000         | 0.5         | 5            |               |                |        |

**\*DSK080\***

D2896-1 Turning Detail

**\*\***

2L 16-5-7

Location

Loc Qty

Loc Code

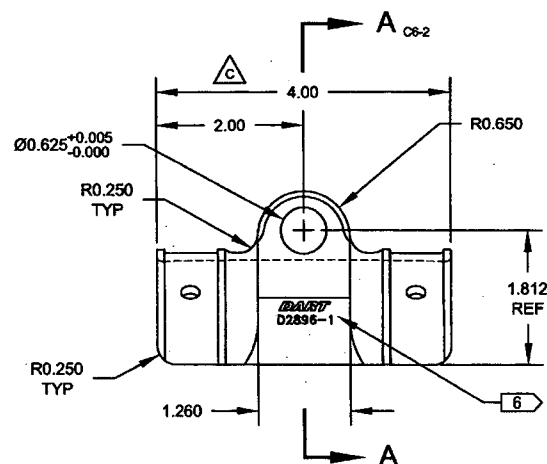
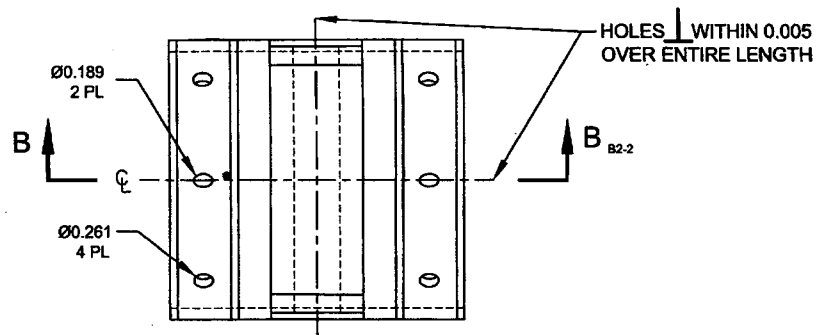
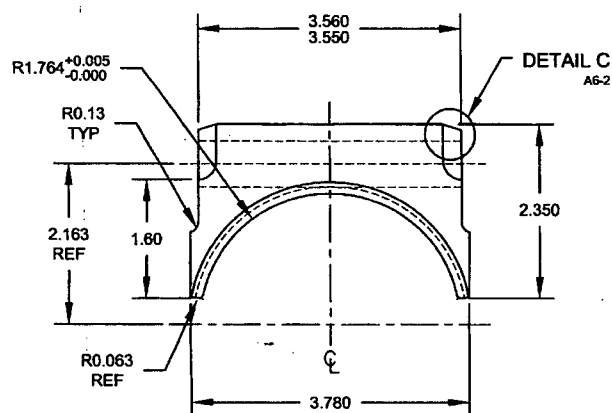
MAT060

5

134334

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**D2896-1 SUPPORT**

**NOTES:**

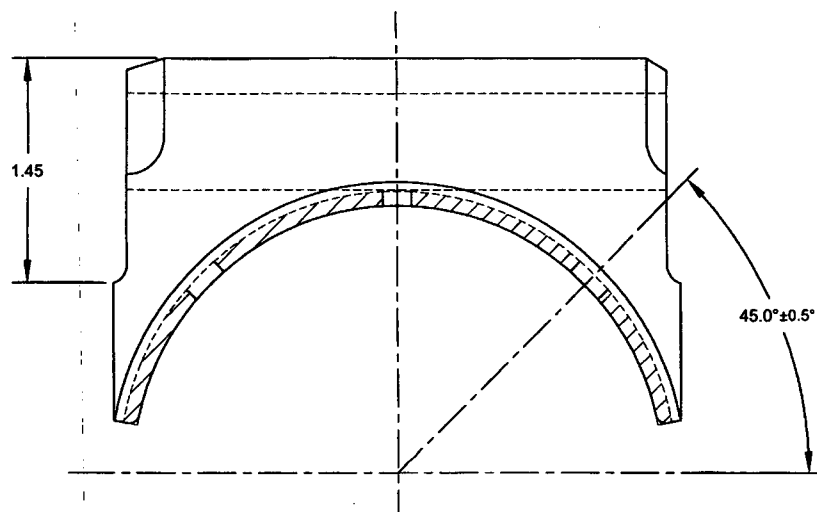
- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION  
PER ASTM A564 OR AMS 5643 OR AISI 630  
MIN UTS = 170 KSI (38 HRC)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO AND P/N WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP PER DART QSI 044 6.3
- 7) WEIGHT: 1.76 lbs

|            |                                                                                            |                                                                                                                                                                                                                                                                                          |              |
|------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| C          | RMV FINISH & UPDATE MAT'L SPEC (A8-1), 2.00 WAS 2.000, 4.00 WAS 4.000 (C4-1), REFORMAT DWG | CP                                                                                                                                                                                                                                                                                       | 11.09.07     |
| B          | INCRP. A1-A4, FINISHING NOTES                                                              | PH                                                                                                                                                                                                                                                                                       | 07.03.19     |
| A          | NEW ISSUE                                                                                  | CP                                                                                                                                                                                                                                                                                       | 01.10.19     |
| DESIGN     | JP                                                                                         | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                 |              |
| DRAWN      | JP                                                                                         |                                                                                                                                                                                                                                                                                          |              |
| CHECKED    | ASS                                                                                        | DRAWING NO.                                                                                                                                                                                                                                                                              | REV. C       |
| MFG. APPR. | JP                                                                                         | D2896                                                                                                                                                                                                                                                                                    | SHEET 1 OF 2 |
| APPROVED   | JP                                                                                         | TITLE                                                                                                                                                                                                                                                                                    | SCALE        |
| DE APPR.   | JP                                                                                         | SUPPORT                                                                                                                                                                                                                                                                                  | NTS          |
| DATE       | 11.09.07                                                                                   | <small>COPYRIGHT © 2004 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |              |

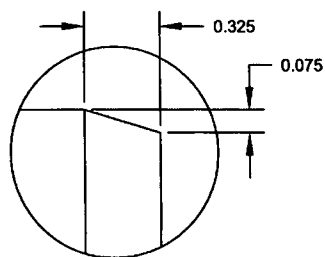
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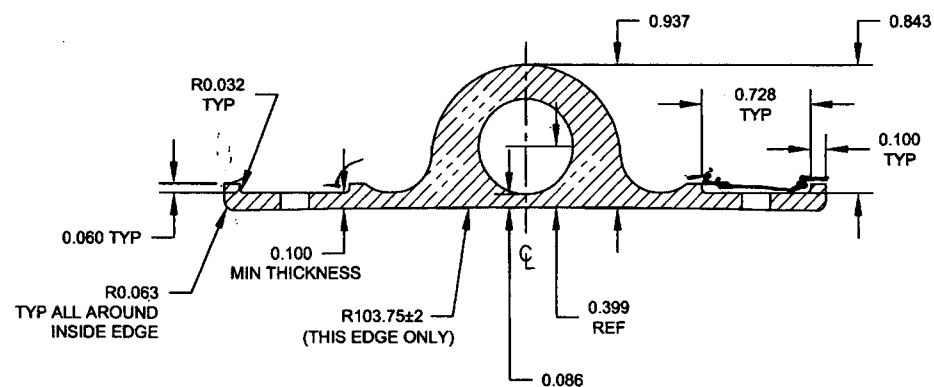
RELEASED  
2011-09-29



**SECTION A-A** C3-1  
TOOLING HOLE DETAIL  
SCALE 2X



**DETAIL C** C6-1  
SCALE 4X



**SECTION B-B** D3-1  
SCALE 2X

**RELEASED**  
2011-09-29

|            |          |                                                                                                                                                                                                                                                                                        |              |
|------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | qp       | <b>DART AEROSPACE LTD</b>                                                                                                                                                                                                                                                              |              |
| DRAWN      | qp       | HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                                            |              |
| CHECKED    | ASS      | DRAWING NO.                                                                                                                                                                                                                                                                            | REV. C       |
| MFG. APPR. |          | D2896                                                                                                                                                                                                                                                                                  | SHEET 2 OF 2 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                                  | SCALE        |
| DE APPR.   |          | SUPPORT                                                                                                                                                                                                                                                                                | NTS          |
| DATE       | 11.09.07 | <small>COPYRIGHT © 2001 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br/>NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br/>WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |              |

|                              |               |                     |         |
|------------------------------|---------------|---------------------|---------|
| <b>DART AEROSPACE LTD</b>    |               | <b>Work Order:</b>  | 145014  |
| <b>Description: Support</b>  |               | <b>Part Number:</b> | D2896-1 |
| <b>Inspection Dwg: D2896</b> | <b>Rev: C</b> | <b>Page 1 of 1</b>  |         |

### FIRST ARTICLE INSPECTION DIMENSION SHEET

|                                                                               |               |               |                | Record Actual Dimensions |          |          |          |          |
|-------------------------------------------------------------------------------|---------------|---------------|----------------|--------------------------|----------|----------|----------|----------|
| Dim                                                                           | Min           | Max           | Go/No Go Gauge | 1                        | 2        | 3        | 4        | 5        |
| <b>HAAS Section</b>                                                           |               |               |                |                          |          | 2.172    | 2.172    |          |
| AA                                                                            | 2.152         | 2.172         |                | 2.160                    | 2.164    | 2.551    | 2.554    | 2.168    |
| AB                                                                            | 2.340         | 2.360         |                | 2.347                    | 2.349    | 2.350    | 2.350    | 2.350    |
| AC                                                                            | 3.550         | 3.560         |                | 3.551                    | 3.551    | 3.554    | 3.554    | 3.552    |
| AD                                                                            | 3.770         | 3.790         |                | 3.778                    | 3.778    | 3.779    | 3.779    | 3.779    |
| AE                                                                            | 0.065 x 0.315 | 0.085 x 0.335 |                | 0.65x315                 | 0.65x315 | 0.65x315 | 0.65x315 | 0.65x315 |
| AF                                                                            | 1.42          | 1.48          |                | 1.445                    | 1.445    | 1.444    | 1.444    | 1.446    |
| AG                                                                            | 0.833         | 0.853         |                | 0.839                    | 0.840    | 0.842    | 0.842    | 0.841    |
| AH                                                                            | 0.240         | 0.260         |                | 0.250                    | 0.250    | 0.250    | 0.250    | 0.250    |
| AI                                                                            | 0.261         | 0.266         |                | 0.261                    | 0.261    | 0.261    | 0.261    | 0.261    |
| AJ                                                                            | 0.189         | 0.194         |                | 0.189                    | 0.189    | 0.189    | 0.189    | 0.189    |
| AK                                                                            | 1.970         | 2.030         |                | 2.003                    | 2.000    | 1.999    | 1.998    | 2.001    |
| AL                                                                            | 0.625         | 0.630         |                | 0.626                    | 0.626    | 0.627    | 0.627    | 0.626    |
| AM                                                                            | 101.75        | 105.75        |                | 103.75                   | 103.75   | 103.75   | 103.75   | 103.75   |
| AN                                                                            | 0.053         | 0.073         |                | 0.063                    | 0.063    | 0.063    | 0.063    | 0.063    |
| AO                                                                            | 0.926         | 0.946         |                | 0.930                    | 0.930    | 0.943    | 0.944    | 0.938    |
| AP                                                                            |               |               |                |                          |          |          |          |          |
| AQ                                                                            |               |               |                |                          |          |          |          |          |
| AR                                                                            |               |               |                |                          |          |          |          |          |
| <b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.005"</b> |               |               |                |                          |          |          |          |          |
| <b>Accept/Reject</b>                                                          |               |               |                |                          |          | 00/5     | 0035     | 003      |

|                              |    |              |          |
|------------------------------|----|--------------|----------|
| <b>Measured by:</b>          | JL | <b>Date:</b> | 16-5-9   |
| <b>Audited by:</b>           | AS | <b>Date:</b> | 16/05/12 |
| <b>Preliminary Approval:</b> |    | <b>Date:</b> |          |

| Rev | Date     | Change                           | Revised by | Approved |
|-----|----------|----------------------------------|------------|----------|
| A   | 02.12.13 | New Issue                        | KJ/RF      |          |
| B   | 04.05.27 | Dimension AE changed             | KJ/RF      |          |
| C   | 06.11.22 | Note added to HAAS section       | KJ/JLM     |          |
| D   | 07.04.16 | Dimsheet updated per Dwg Rev. B  | KJ/JLM     |          |
| E   | 08.04.22 | Reformat                         | KJ/JLM     |          |
| F   | 12.07.31 | Dimensions updated per Dwg Rev C | KJ         |          |



|                              |               |                     |         |
|------------------------------|---------------|---------------------|---------|
| <b>DART AEROSPACE LTD</b>    |               | <b>Work Order:</b>  | 145014  |
| <b>Description: Support</b>  |               | <b>Part Number:</b> | D2896-1 |
| <b>Inspection Dwg: D2896</b> | <b>Rev: C</b> | <b>Page 1 of 1</b>  |         |

### FIRST ARTICLE INSPECTION DIMENSION SHEET

| Dim                                                                           | Min           | Max           | Go/No<br>Go<br>Gauge | Record Actual Dimensions |            |            |            |            |
|-------------------------------------------------------------------------------|---------------|---------------|----------------------|--------------------------|------------|------------|------------|------------|
|                                                                               |               |               |                      | 16                       | 17         | 18         | 19         | 20         |
| <b>HAAS Section</b>                                                           |               |               |                      |                          |            |            |            |            |
| AA                                                                            | 2.152         | 2.172         |                      | 2.165                    | 2.162      | 2.165      | 2.163      | 2.160      |
| AB                                                                            | 2.340         | 2.360         |                      | 2.351                    | 2.356      | 2.354      | 2.355      | 2.356      |
| AC                                                                            | 3.550         | 3.560         |                      | 3.553                    | 3.553      | 3.553      | 3.556      | 3.556      |
| AD                                                                            | 3.770         | 3.790         |                      | 3.778                    | 3.778      | 3.778      | 3.783      | 3.783      |
| AE                                                                            | 0.065 x 0.315 | 0.085 x 0.335 |                      | 0.065x.315               | 0.065x.315 | 0.065x.315 | 0.065x.315 | 0.065x.315 |
| AF                                                                            | 1.42          | 1.48          |                      | 1.446                    | 1.449      | 1.447      | 1.449      | 1.448      |
| AG                                                                            | 0.833         | 0.853         |                      | .842                     | .847       | .844       | .848       | .843       |
| AH                                                                            | 0.240         | 0.260         |                      | .250                     | .250       | .250       | .250       | .250       |
| AI                                                                            | 0.261         | 0.266         |                      | .261                     | .261       | .261       | .261       | .261       |
| AJ                                                                            | 0.189         | 0.194         |                      | .189                     | .189       | .189       | .189       | .189       |
| AK                                                                            | 1.970         | 2.030         |                      | 2.001                    | 2.000      | 2.001      | 2.000      | 2.002      |
| AL                                                                            | 0.625         | 0.630         |                      | .627                     | .628       | .626       | .627       | .627       |
| AM                                                                            | 101.75        | 105.75        |                      | 103.75                   | 103.75     | 103.75     | 103.75     | 103.75     |
| AN                                                                            | 0.053         | 0.073         |                      | .063                     | .063       | .063       | .063       | .063       |
| AO                                                                            | 0.926         | 0.946         |                      | .931                     | .937       | .935       | .937       | .935       |
| AP                                                                            |               |               |                      |                          |            |            |            |            |
| AQ                                                                            |               |               |                      |                          |            |            |            |            |
| AR                                                                            |               |               |                      |                          |            |            |            |            |
| <b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.005"</b> |               |               |                      |                          |            |            |            |            |
| Accept/Reject                                                                 |               |               |                      | .003                     | .001       | .003       | .003       | .001       |

|                              |      |              |          |
|------------------------------|------|--------------|----------|
| <b>Measured by:</b>          | SL   | <b>Date:</b> | 16-5-9   |
| <b>Audited by:</b>           | B.E. | <b>Date:</b> | 16/05/12 |
| <b>Preliminary Approval:</b> |      | <b>Date:</b> |          |

| Rev | Date     | Change                           | Revised by | Approved |
|-----|----------|----------------------------------|------------|----------|
| A   | 02.12.13 | New Issue                        | KJ/RF      |          |
| B   | 04.05.27 | Dimension AE changed             | KJ/RF      |          |
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| F   | 12.07.31 | Dimensions updated per Dwg Rev C | KJ         |          |